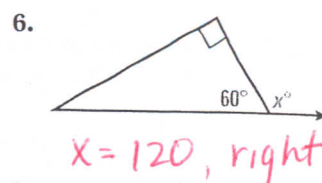
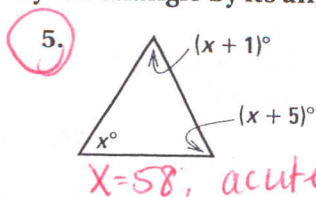
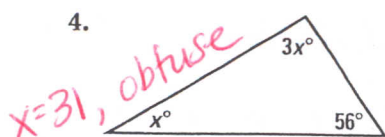


Chapter 4

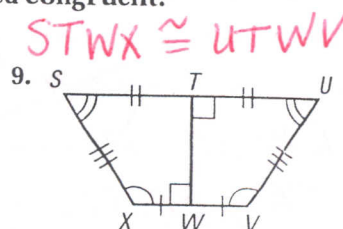
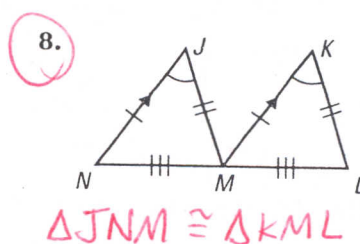
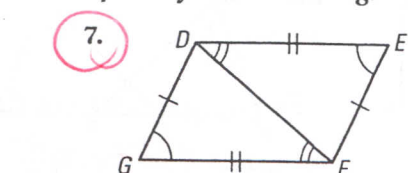
4.1 A triangle has the given vertices. Graph the triangle and classify it by its sides. Then determine if it is a right triangle.

1. $A(-1, -2), B(-1, 2), C(4, 2)$ 2. $A(-1, -1), B(3, 1), C(2, -2)$ 3. $A(-3, 4), B(2, 4), C(5, -2)$
scalene, right *isosceles, right* *scalene (not right)*

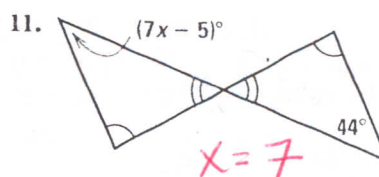
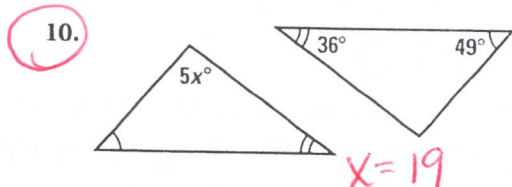
4.1 Find the value of x . Then classify the triangle by its angles.



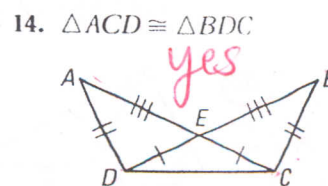
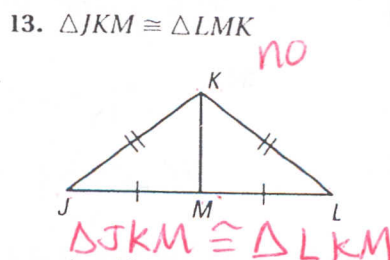
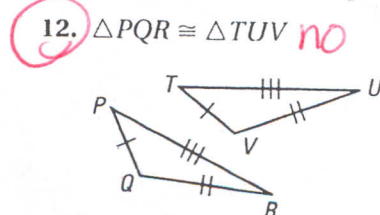
4.2 Write a congruence statement for any figures that can be proved congruent. Explain your reasoning.



4.2 Find the value of x .



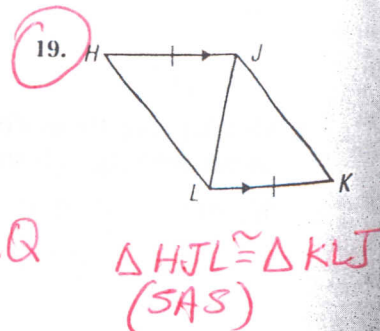
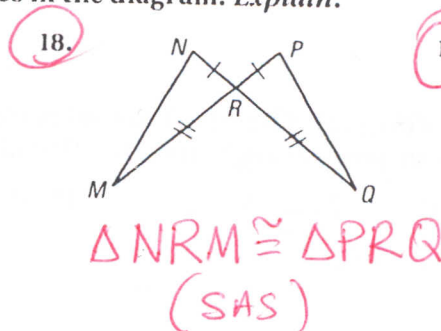
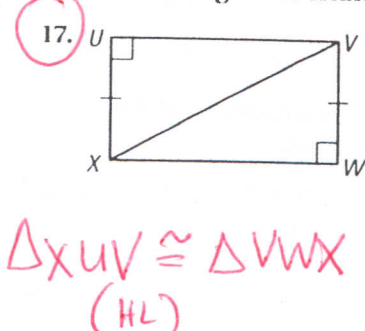
4.3 Decide whether the congruence statement is true. Explain your reasoning.



4.3 Use the given coordinates to determine if $\triangle ABC \cong \triangle PQR$.

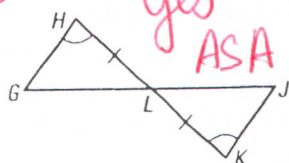
15. $A(-2, 1), B(2, 6), C(6, 2), P(-1, -2), Q(3, 3), R(7, -1)$ *congruent*
 16. $A(-4, 5), B(2, 6), C(-2, 3), P(2, 1), Q(8, 2), R(5, -1)$ *not congruent*

4.4 Name the congruent triangles in the diagram. Explain.



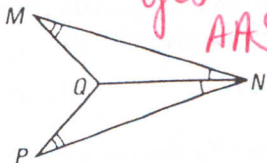
4.5 Is it possible to prove that the triangles are congruent? If so, state the postulate or theorem you would use.

20. $\triangle GHL, \triangle JKL$



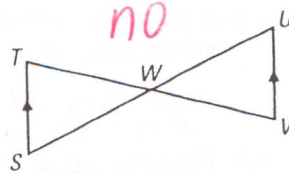
yes
ASA

21. $\triangle MNQ, \triangle PNQ$



yes
AAS

22. $\triangle STW, \triangle UVW$



no

4.5 Tell whether you can use the given information to determine whether $\triangle ABC \cong \triangle DEF$. Explain your reasoning.

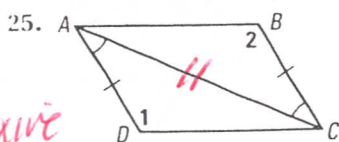
23. $\angle A \cong \angle D, \overline{AB} \cong \overline{DE}, \angle B \cong \angle E$

yes
ASA

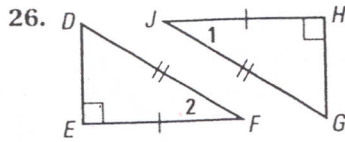
24. $\overline{AB} \cong \overline{DE}, \overline{BC} \cong \overline{EF}, \angle A \cong \angle D$

no

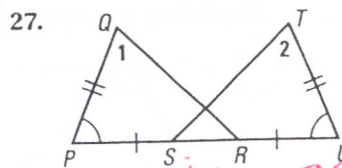
4.6 Use the information in the diagram to write a plan for proving that $\angle 1 \cong \angle 2$.



Reflexive,
SAS, CPCTC



HL, CPCTC



Segment Addition, SAS,
CPCTC

4.6 Use the vertices of $\triangle ABC$ and $\triangle DEF$ to show that $\angle A \cong \angle D$. Explain.

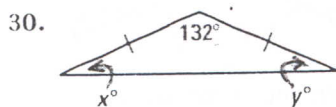
28. $A(0, 8), B(6, 0), C(0, 0), D(3, 10), E(9, 2), F(3, 2)$

$AB = DE = 10, AC = DF = 8, BC = EF = 6$

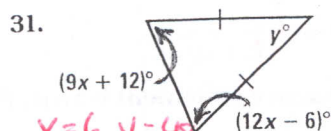
29. $A(-3, -2), B(-2, 3), C(2, 2), D(5, 1), E(6, 6), F(10, 5)$

$AB = DE = \sqrt{26}, AC = DF = \sqrt{41}, BC = EF = \sqrt{17}$

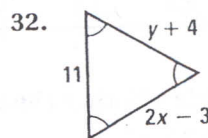
4.7 Find the value(s) of the variable(s).



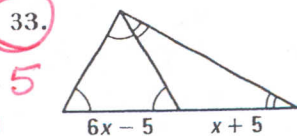
$x = 24, y = 24$



$x = 6, y = 48$

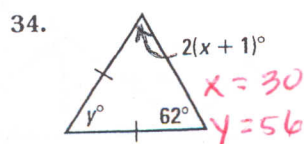


$x = 7, y = 7$

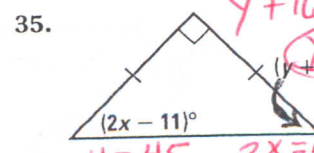


$6x - 5 = x + 5$
 $5x = 10$

$x = 2$



$x = 30$
 $y = 56$



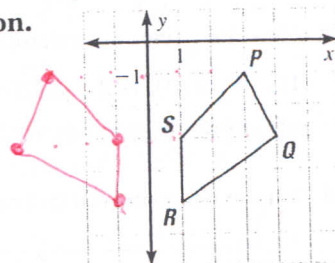
$2x - 11 = 45$
 $2x = 56$
 $x = 28$

4.8 Copy the figure and draw its image after the transformation.

36. Reflection: in the y-axis

37. Reflection: in the x-axis

38. Translation: $(x, y) \rightarrow (x - 3, y + 7)$



4.8 Use the coordinates to graph \overline{AB} and \overline{CD} . Tell whether \overline{CD} is a rotation of \overline{AB} about the origin. If so, give the angle and direction of rotation.

39. $A(4, 2), B(1, 1), C(-4, -2), D(-1, -1)$

yes 180°

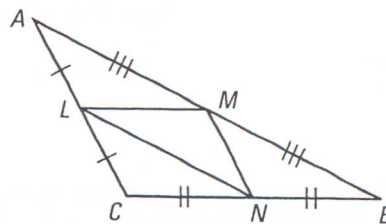
40. $A(-1, 3), B(0, 2), C(-1, 2), D(-3, 1)$

no

Chapter 5

5.1 Copy and complete the statement.

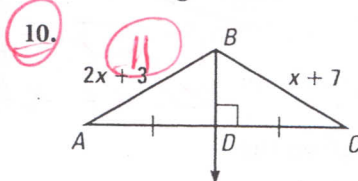
1. $\overline{LN} \parallel ?$ \overline{AB}
2. $\overline{CB} \parallel ?$ \overline{LM}
3. $\overline{MN} \parallel ?$ \overline{AC}
4. $AM = ? = ?$ MB, LN
5. $MN = ? = ?$ LC, AL



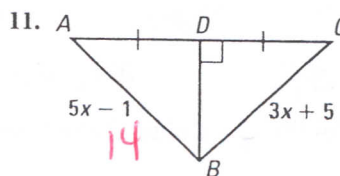
5.1 Place the figure in a coordinate plane in a convenient way. Assign coordinates to each vertex.

6. Isosceles right triangle: leg length is 4 units
7. Scalene triangle: one side length is 6 units
8. Square: side length is 5 units
9. Right triangle: leg lengths are s and t

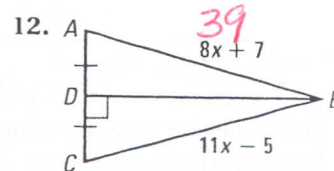
5.2 Find the length of \overline{AB} .



$$2x + 3 = x + 7 \quad x = 4$$



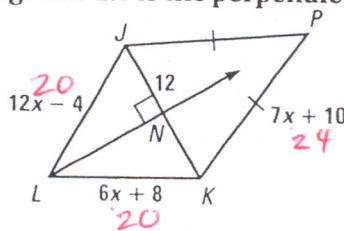
$$14$$



$$39$$

5.2 In Exercises 13–17, use the diagram. \overline{LN} is the perpendicular bisector of \overline{JK} .

13. Find KN. 12
14. Find LJ. 20
15. Find KP. 24
16. Find JP. 24
17. Is P on \overline{LN} ? yes



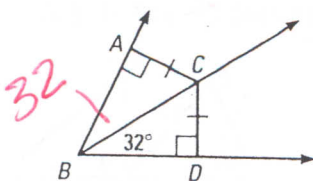
$$12x - 4 = 6x + 8$$

$$6x = 12$$

$$x = 2$$

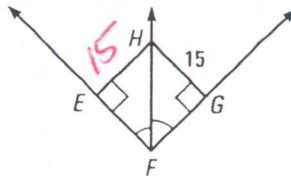
5.3 Use the information in the diagram to find the measure.

18. Find $m\angle ABC$.



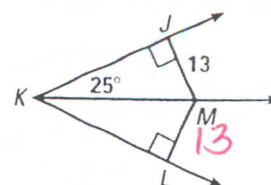
$$32$$

19. Find EH.



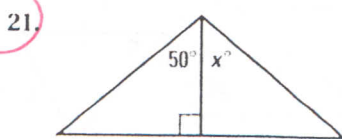
$$15$$

20. $m\angle JKL = 50^\circ$. Find LM.

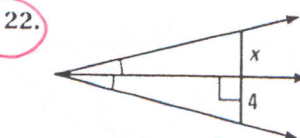


$$13$$

5.3 Can you find the value of x ? Explain.

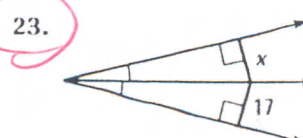


not enough info



$$x = 4$$

(ASA)



$$x = 17$$

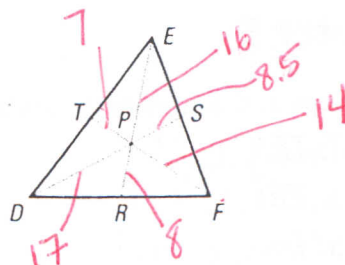
5.4 P is the centroid of $\triangle DEF$, $FP = 14$, $RE = 24$, and $PS = 8.5$. Find the length of the segment.

24. \overline{TF} 21

26. \overline{DS} 25.5

25. \overline{DP} 17

27. \overline{PR} 8



5.4 Use the diagram shown and the given information to decide whether \overline{BD} is a perpendicular bisector, an angle bisector, a median, or an altitude of $\triangle ABC$.

28. $\overline{BD} \perp \overline{AC}$ altitude

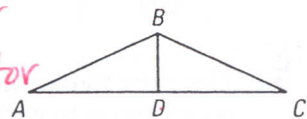
30. $\overline{AD} \cong \overline{CD}$ median

32. $\triangle ABD \cong \triangle CBD$
all 4

29. $\angle ABD \cong \angle CBD$ ~~angle~~ bisector

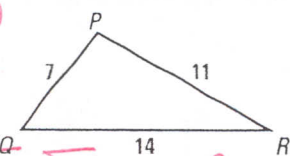
31. $\overline{BD} \perp \overline{AC}$ and $\overline{AD} \cong \overline{CD}$ ~~perp~~ bisector

33. $\overline{BD} \perp \overline{AC}$ and $\overline{AB} \cong \overline{CB}$
all 4



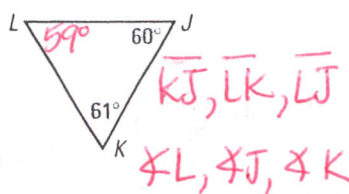
5.5 List the sides and angles in order from smallest to largest.

34.



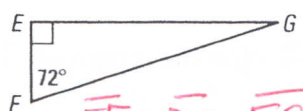
$\overline{QP}, \overline{PR}, \overline{QR}$ ~~$\angle R, \angle Q, \angle P$~~

35. \angle



$\overline{KJ}, \overline{LK}, \overline{LJ}$
 ~~$\angle L, \angle J, \angle K$~~

36. \angle



$\overline{EF}, \overline{EG}, \overline{FG}$
 ~~$\angle G, \angle F, \angle E$~~

5.5 Describe the possible lengths of the third side of the triangle given the lengths of the other two sides.

37. 9 inches, 8 inches

40. 1 foot, 17 inches

38. 24 feet, 13 feet

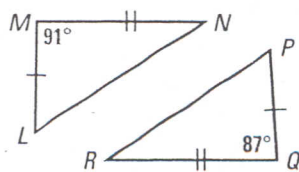
41. 4 feet, 2 yards = 6 ft.
 $2 \text{ ft} < x < 10 \text{ ft}$

39. 3 inches, 9 inches

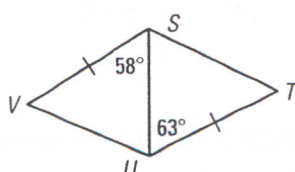
42. 2 yards, 6 feet
 $0 \text{ ft} < x < 12 \text{ ft}$

5.6 Copy and complete with $>$, $<$ or $=$. Explain.

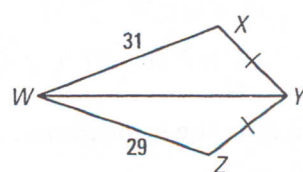
43. $\overline{LN} > \overline{PR}$



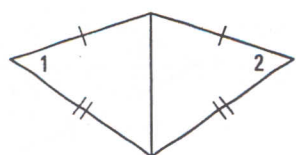
44. $\overline{VU} < \overline{ST}$



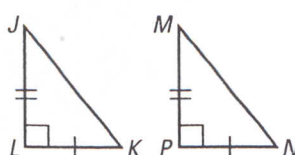
45. $m\angle WYX > m\angle WYZ$



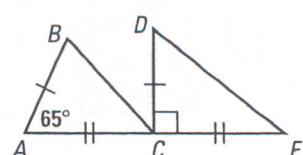
46. $m\angle 1 = m\angle 2$



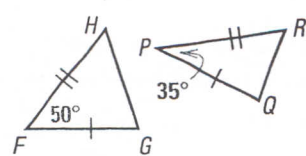
47. $\overline{JK} = \overline{MN}$



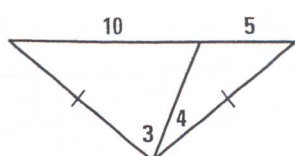
48. $\overline{BC} < \overline{DE}$



49. $\overline{GH} > \overline{QR}$



50. $m\angle 3 > m\angle 4$



51. $m\angle 5 < m\angle 6$

